Technical Report No. 36

Options for Financing Health Services in the Pilot Facilities in Alexandria

August 1999

Prepared by:

A.K. Nandakumar, Ph.D
Abt Associates Inc.

Mahmoud Abdel-Latif, M.D., M.P.H.
Ministry of Health and Population, Egypt

Wessam El-Beih, M.D., M.Sc.
Abt Associates Inc.

Partnerships for Health Reform

PHR

Abt Associates Inc. ■ 4800 Montgomery Lane, Suite 600
Bethesda, Maryland 20814 ■ Tel: 301/913-0500 ■ Fax: 301/652-3916

In collaboration with:
Development Associates, Inc. ■ Harvard School of Public Health ■
Howard University International Affairs Center ■ University Research Co., LLC

Funded by:
U.S. Agency for International Development

Partnerships
for Health
Reform
PHR

Mission

The Partnerships for Health Reform (PHR) Project seeks to improve people's health in low- and middle-income countries by supporting health sector reforms that ensure equitable access to efficient, sustainable, quality health care services. In partnership with local stakeholders, PHR promotes an integrated approach to health reform and builds capacity in the following key areas:

- *Better informed and more participatory policy processes in health sector reform;*
- *More equitable and sustainable health financing systems;*
- *Improved incentives within health systems to encourage agents to use and deliver efficient and quality health services; and*
- *Enhanced organization and management of health care systems and institutions to support specific health sector reforms.*

PHR advances knowledge and methodologies to develop, implement, and monitor health reforms and their impact, and promotes the exchange of information on critical health reform issues.

August 1999

Recommended Citation

Nandakumar, A.K., Mahmoud Abdel-Latif, and Wessam El-Beih. August 1999. *Options for Financing Health Services in the Pilot Facilities in Alexandria.* Technical Report No. 36. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

For additional copies of this report, contact the PHR Resource Center at pub_order@PHRproject.com or visit our website at www.phrproject.com.

Contract No.: HRN-C-00-95-00024
Project No.: 936-5974.13

Submitted to: USAID/Cairo

and: Robert Emrey, COTR
Policy and Sector Reform Division
Office of Health and Nutrition
Center for Population, Health and Nutrition
Bureau for Global Programs, Field Support and Research
United States Agency for International Development

Abstract

Data on enrollee profile, utilization, and costs derived from the Family Health Units and Family Health Center at Seuf as well as other relevant studies have been used to present a set of financing options for the pilot sites in Alexandria. The introduction of Family Health Units has drawn into the health system those most in need and least likely to have insurance. It appears that creating an integrated delivery system of primary care services with well-defined referral systems and strong management oversight allows for the provision of services of acceptable quality at a reasonable cost with increased patient satisfaction. However, for the short- and long-term success of the reform it is critical to put in place a sustainable financing mechanism. This will require key policy decisions. Many of these issues along with options for dealing with them are presented in this report.

Table of Contents

List of Tables

Annex Tables

Acronyms

CCO	Curative Care Organization
FHC	Family Health Center
FHF	Family Health Fund
FHU	Family Health Unit
HIO	Health Insurance Organization
LE	Egyptian Pound
MOF	Ministry of Finance
MOHP	Ministry of Health and Population
PHR	Partnerships for Health Reform Project
TSO	Technical Support Office
TST	Technical Support Team
USAID	United States Agency for International Development

Currency Conversion US$ 1.00 = 3.4 LE

Acknowledgments

The recommendations contained in this report were developed through a series of meetings with the Technical Support Office (TSO) of the Ministry of Health and Population (MOHP) and the High Committee for Insurance. In particular, the support and guidance provided by Dr. Wagida Anwar, director of the TSO, Dr. Hasan Abdel Fatah, chairman of the Health Insurance Organization (HIO), Dr. Hosni Tammam, technical coordinator of the TSO, Professor A.M. Ebeid, TSO quality assurance consultant, and Dr. Alaa Ghanam, HIO coordinator, are gratefully acknowledged. They reviewed the analysis, offered invaluable insight into the identification of the policy questions as well as options, and guided the discussion on financing options. We would also like to thank Dr. Mahdeya Mahmoud, coordinator of the Alexandria Technical Support Team (TST), Dr. Hanem Abdel Salam El Abbasy, director of the Seuf Center, and others at the Seuf Family Health Unit for their assistance in obtaining cost, enrollment, and utilization data.

Executive Summary

This report presents for consideration a set of financing options for the pilot sites in Alexandria, Egypt. Data on enrollee profile, utilization, and costs are derived from the Family Health Units (FHU) and Family Health Center (FHC) at Seuf as well as other relevant studies. Where actual data were not available, estimates have been used. The following seven basic principles were used for guiding this work:

1. The Family Health Fund should be responsible only for the Family Health Units, referral services contained in the basic benefits package including specialist and hospital care, and the administrative costs of the fund.

2. Financing should support enhanced access to basic health services that are of an acceptable quality and provide the greatest benefits to individuals with low incomes, women, and children.

3. There should be short-term budget neutrality. In the short-term, costs should be fully recovered from current Ministry of Health and Population (MOHP) expenditures, households, and the Health Insurance Organization (HIO).

4. Everyone will be expected to share in the costs of the health scheme based upon his or her ability to pay.

5. As a safety net, the government or other sources should explicitly subsidize costs incurred by the poor. The government should continue to finance the costs of community-based public health services.

6. The FHC should be economically sustainable.

7. The FHUs should be run efficiently and effectively to ensure the ability to cover costs and provide quality services.

The report also identifies a number of specific policy issues that will need to be decided by the Minister of Health. (Annex A presents a summary of many of the policy issues.) The utilization and cost estimates presented here will need to be refined through data that will be collected from other pilot sites. The suggestions presented here are geared towards developing financing options for an urban model. Modifications will be needed for rural areas.

Key Findings

The following key findings emerged from the analysis:

- The introduction of FHUs has drawn into the health system those most in need and least likely to have insurance.

- Infants, school-age children, women, and the elderly account for nearly 90 percent of visits at the FHUs.

- Creating an integrated delivery system of primary health care services with well-defined referral systems appears to provide acceptable, quality services at a reasonable cost with increased patient satisfaction.

- Current MOHP and HIO expenditures will be sufficient to cover basic costs at the FHU and subsidize costs of the poor. Household contributions in the form of roster, visit, and copayment fees can be used to pay incentives and other costs.

- For the short- and long-term sustainability of the reform, the MOHP and HIO should continue to support capital investment for upgrading existing facilities and constructing new facilities.

The financing options presented here are part of a broader strategic framework for supporting sustainable family health care. This strategic framework is presented in Table I. Giving adequate attention to and support for these integrated strategies is key to the short- and long-term financial sustainability of the reform and the pilot.

Table I. Recommended Strategies to Support Sustainable Primary Care for Families

Quality of Care	. Facility accreditation . Performance-based provider incentives . Patient satisfaction surveys . Facility quality teams . Family choice
Referrals	. Limit referrals to basic benefits package services . Report provider referral rates . Prepare referral outcome reports
Hospital Care	. Restrict hospital services to basic benefits package . Prepare hospital outcome reports
Use of Resources	. Business manager for each facility . Cost accounting system . Performance indicators
Pharmaceuticals	. Essential drug list . Patient/provider education . Provider pharmaceutical use reports
Facility Maintenance	. Depreciation allowance for each facility . Family choice of facility
Chronic Disease Management	. Basic benefits package for referrals and hospital care . Free access to primary care that includes health education, prevention, and promotion services
Adequate Resources for Primary Care	. Cost-based reimbursement rates . Monthly facility cost-performance reports . Financially and managerially separate FHU and family health centers.
Key Primary Care Services (family planning, maternal child health, communicable disease control)	. Basic benefits package . Basic lab services and immunizations free of charge . Performance-based provider incentives
Subsidies for the Poor	. Social worker part of primary health team

	. Standard guidelines for eligibility

Health Care Expenditures

The following provides basic information on the background of health care expenditures in Alexandria:

- *Per capita expenditures in Alexandria are more than twice the national average*. On a per capita basis, the MOHP spent LE 49 (of this amount, LE 20 was for outpatient care), the HIO spent LE 42, and households spent LE 153.

- More than half (58 percent) of the population in Alexandria were covered under HIO insurance schemes. The national coverage rate is 37 percent.

- *Significant inequities exist in access to and financing of health care*. Annual per capita health care use rates for those in the lowest income quintiles were less than half those of individuals in the highest income quintile. Similarly, per capita out-of-pocket expenditures for those in the lowest income quintile was LE 37, compared with LE 359 for those in the highest income quintile

- *The MOHP remains the largest institutional financier and provider of health services for the poor*. Of those in the lowest income quintile, 63 percent of their outpatient visits took place at MOHP clinics, and only 4 percent of visits occurred in the private sector.

- *The MOHP is most effective in targeting its spending on low-income individuals*. On the other hand, expenditures of the HIO and university hospitals tend to favor higher income individuals.

- The MOHP plays the important role of providing a safety net for the uninsured and the poor.

Analysis of the Seuf Family Health Unit and Family Health Center

Family Health Unit Population Profile

Studies revealed the following profile of the enrollee population at Seuf Family Health Units:

- The introduction of Family Health Units has drawn into the health system those most in need and least likely to have insurance

- The majority of the enrollee population (78 percent) consists of housewives, school children, pensioners, the self-employed, and the unemployed. Only 14 percent of the enrolled population work in the formal sector.

- The average family has 4.7 persons.

- Less than 2.3 percent of children under age five are insured.

- Males are far more likely to have insurance than females. Less than 2 percent of females age 50 to 59 have insurance while the figure for males in the same age group is 69.5 percent. For males older than 60 years of age, 74.9 percent are insured while less than 3 percent of females in this age group have insurance.

- In terms of occupation, school children, employees, workers, and pensioners are largely insured. *However, only 1 percent of housewives, 2.7 percent of the unemployed, and 5.5 percent of the self-employed reported having any insurance.*

Use of Health Services

Studies revealed the following about the use of health care services at Seuf Family Health Units:

- Overall, infants, school-age children, women, and the elderly account for 84 percent of visits to Family Health Units. Males between the ages of 16-59 account for only 6.7 percent of the visits.

- The majority of all visits (59 percent) are for acute care, and the remaining 41 percent are for chronic conditions.

- Repeat visits for chronic care account for more than 75 percent of all chronic care visits.

- The use rate observed in July translated to 3.4 visits per year per enrollee. However, this could change once vertical program services are fully integrated into the Family Health Units.

- The question of defining "the poor" will become more pronounced when roster fees, increased visit fees, and higher copayments are introduced. The government's liability will depend on the characteristics that are used to define eligibility for subsidized care.

Physician Productivity and Referrals

- *Family doctor practices provide the majority of patient encounters.* They see an average of 18.3 patients per day and spend roughly 13 minutes with each patient. On the other hand, specialists see less than one patient per day.

- *Only 3.4 percent of visits at the Seuf Family Health Units resulted in a referral to a specialist.* This compares with 65 percent at the HIO general practitioner clinic and 32 percent at the HIO school clinics. At university hospital clinics, the referral rate was 10.6 percent from pediatric clinics and 11.7 percent from internal medicine clinics.

- Physicians trained in family medicine are not general practitioners in the true sense of the term. As an example, two of the family physicians are trained pediatricians and one is an internist; therefore, they would be less likely to refer routine cases to other pediatricians and internists.

Cost Estimates

Where possible, actual costs were used in the analysis. A three-step process was carried out that included the following:

- Division of Activities – As a first step, activities at Seuf were divided into cost centers. These cost center activities were then divided into those related to the Family Health Unit and those related to the Family Health Center.

- Development of Cost Estimates – Detailed cost estimates were then developed for the Family Health Unit and Family Health Center cost centers. Cost estimation assumed that the Unit and Center would be fully staffed and operational. Where actual costs were not

available, estimates based upon other cost studies were used. Administrative and overhead costs were allocated between Family Health Unit and Family Health Center cost centers proportionate to their share of total costs.

- Calculation of Per Capita Enrollee Cost – The per capita cost of an enrollee was calculated by adding the cost of a referral to specialists, investigations, hospitalization, fund administration, and fund reserve costs to the Family Health Unit costs and then dividing the total cost by the number of enrollees at a Family Health Unit. At Seuf, there are 600 families with 3,000 individuals rostered with each family doctor.

Cost Estimates for a Family Roster

Three scenarios are presented for this cost estimate: the base case with current salaries; Scenario I, where performance-based incentive payments increase salaries by 250 percent; and Scenario II, where performance-based incentives increase salaries by 400 percent.

The fund-related costs include the administrative costs of running the fund as well as the reserves that will need to be established. The administrative overhead at the Family Health Fund has been constrained at 10 percent. This is to ensure that the fund is run efficiently and that there is an emphasis on cost containment as well as accountability in that every employee is working at optimum capacity. For now, the reserves have been set at 10 percent. This is to provide a cushion for cost fluctuations caused by unanticipated use of the fund, increases in price, or other unforeseen circumstances. More exact reserving ratios can be developed based on longitudinal performance data. The following tables provide fund-related cost estimates per family (Table II) and per individual enrollee (Table III) based on the three scenarios.

Table II. Annual Costs Per Family Roster (Egyptian Pounds)

Category	Base Case	Scenario I (Incentive of 250%)	Scenario II (Incentive of 400%)
Family Practice	34,812	53,591	66,272
Referral Services	6,821	8,537	9,948
Fund Related Costs	8,327	12,426	15,244
Total Costs	49,961	74,554	91,464

Table III. Annual Per Capita Costs Per Enrollee (Egyptian Pounds)

Category	Base Case	Scenario I (Incentive of 250%)	Scenario II (Incentive of 400%)
Family Practice	11.60	17.86	22.09
Referral Services	2.27	2.85	3.32
Fund Related Costs	2.78	4.24	5.08
Total Costs	16.65	24.85	30.50

It appears that creating an integrated delivery system of primary health care services with well-defined referral systems allows quality services to be provided at a reasonable cost with increased patient satisfaction.

The lower than expected per capita costs observed at the Seuf Family Health Unit to date and projected for the future depend on several key factors including:

- Strong management oversight of the Family Health Unit's performance and costs
- Strict control over administrative overheads through rational staffing
- Selective referrals to specialists and for investigations
- Strict control over drug prescriptions and costs
- The ability to purchase hospitalization services at competitive rates (in this case from Shark El Medina Hospital)
- The assumption that Family Health Fund administrative costs will not exceed 10 percent of the costs of family practice and referral costs.

Cost of Family Health Center Activities

The annual costs of operating the Family Health Center activities at Seuf range from LE 669,000 to more than LE 1,250,000 (see Table IV).

Referrals from each family practice will cover less than 1 percent of the costs at the Family Health Center. As an example, assuming one family physician refers 10 percent of his or her cases to specialists (compared to the current 3.5 percent), each of the six specialists at Seuf will receive only 1.5 percent of his or her cases from a family practitioner. Similarly, the number of x-rays ordered by a family physician will account for less than 2 percent of the costs of the radiology unit. A similar level of referrals will be needed to fully support the operating theater.

Making Family Health Centers economically viable will be particularly challenging. The experiences from Seuf, Mohsen, Khorshed, and Gon as well as the completion of the master plan will provide important information on the appropriate catchment area and staffing norms for the Family Health Center. At the same time, a plan needs to be developed on how to make the Family Health Center viable. Some options might include entering into an agreement with the Shark El Madina referral hospital to provide services for their patients at the operation theater, x-ray, and laboratory units at Seuf; and providing services on a fee-for-service basis to non-rostered patients.

In the short-term, the MOHP will have to continue to pay the costs of the Family Health Center, including any incentive payment to the staff.

Table IV. Annual Costs of Family Health Center Activities (Egyptian Pounds)

Activity	Base Case	Scenario I (Bonus of 250%)	Scenario II (Bonus of 400%)
Specialist Practices	61,508	142,797	227,337
Radiology Unit	94,227	125,832	147,372
Laboratories	36,473	66,297	74,057
Emergency Rooms	99,030	125,832	142,670
Operation Theater	124,896	129,144	154,248
Inpatient Ward	33,214	53,767	67,482
Delivery Room	1,830	2,329	2,673
Pharmacy (no drugs costs)	6,475	24,480	36,257
Dental Unit	84,382	150,369	168,754
Public Health Services	15,190	38,721	43,826
Family Health Fund Costs	111,444	167,226	222,934
Total Annual Costs	668,668	1,003,360	1,227,606

Financing Options

The short-term financing options for Family Health Units take into account the following constraints:

- The financing options will have to be developed within existing rules and regulations.
- Enrollment at the Family Health Units is voluntary.
- HIO beneficiaries will continue to pay the same visit fees and copayment rates. In other words, for those covered under Laws 32 and 79, visit fees and copayment for drugs will be either nonexistent or negligible. For school children, the copayment will be a third of the cost of drugs.
- It may be that employees will continue coverage at HIO clinics at their place of employment, and their spouse and children will seek care at the Family Health Unit nearest to their home. Pensioners will seek care at the facility nearest to their home.

The three sources of financing are:

- MOHP current expenditures and subsidies for poor families;
- HIO current expenditures; and
- Households, which are responsible for an annual roster fee, visit fees, and copayments for drugs and investigations.

The goal is to cover the base cost at Family Health Units from existing MOHP and HIO expenditures. The Family Health Fund will use roster fees to pay incentives and other costs. Visit fees and copayments for drugs will be retained at the level of the facility and will go towards payment of incentives and other costs.

For the short- and long-term sustainability of the reform, the MOHP and HIO should continue to support capital investment for upgrading existing facilities and constructing new facilities. For private sector providers who are selected to participate in the reform, the MOHP should assist them in getting loans and other assistance for upgrading their facilities to meet the established standards.

In the short-term, the MOHP will bear the full cost of the Family Health Centers. As affiliated Family Health Units get established and other avenues of resource mobilization are identified, the share of the MOHP support will decline. The Family Health Fund will reimburse the center on a fee-for-service basis for specialist visits and investigations limited to those in the basic benefits package.

At a cost of LE 31 per capita, it should be feasible to finance the costs from the three sources identified above. The following section describes a likely financing scenario for enrollees at MOHP Family Health Units, making some assumptions on roster fees, copayment rates, and government subsidies for the poor. A series of issues and options pertaining to financing is also presented in a later section. Once the Minister of Health makes a decision on these issues, the final financing matrix can be developed.

Financing Scenario

This section presents a likely scenario for financing populations enrolled at MOHP Family Health Units. Tables V through VIII offer data on the distribution of enrolled individuals, per capita annual costs, a payment schedule for households, and distribution of revenue in this scenario. The methodology presented here can be used to generate financing options at HIO and private sector Family Health Units when cost data are available.

Number of families enrolled with one family doctor practice	600
Number of individuals	3,000

Table V. Distribution of Enrolled Individuals at Seuf Family Health Unit by Insurance Status

Category	Percent
Noninsured Non-poor	32
Noninsured Poor	25
Insured Employees	6
Insured School Children	32
Insured Pensioners	5
Total	100

Table VI. Distribution of Per Capita Annual Cost

Category	Amount (LE)
Annual Per Capita Cost	LE 31
Annual Per Capita Cost for Pensioners	LE 120
Annual Per Capita Cost Non-pensioner	LE 27

Note: Based on Seuf cost analysis and HIO data on costs on pensioners

Table VII. Payment Schedule for Households

Item	Cost
Roster Fee	LE 10 per person per year
Visit Fee (applies only to uninsured)	LE 3 per visit No visit fees for immunization, family planning, and antenatal care visits
Lab Investigations (applies only to uninsured)	No fee for investigations at Unit (urine, stool, and blood) LE 5 for referral investigations
Copayment Drugs (applies only to uninsured)	LE 1 per drug prescribed per prescription (assumes average of 1 drug per prescription)

Regarding the number of annual visits per capita, it is assumed that two visits per year will be for services that are not related to immunization, family planning, or antenatal care.

Current MOHP expenditures for salaries, medical supplies, and other costs equal roughly LE 15 per enrollee at Seuf. Neither the budget approach nor the amount is expected to change. On average, the MOHP currently spends LE 20 per capita per year on outpatient services in Alexandria. This estimate is based upon the Alexandria Health Expenditure study and the budget tracking system data. It is proposed that after accounting for the current budget expenditures at Seuf, the remaining LE 5 be used to subsidize the costs of the poor. In other words, the efficiency bonus will be reinvested in the poor.

Table VIII presents potential revenue generation under this scenario. The slight projected surplus will go towards establishing the reserve fund at the Family Health Fund and to provide a buffer against differing population profiles at other MOHP Family Health Units.

Table VIII. Likely Distribution of Per Capita Revenue by Category of Individuals

Category of Individual	Distribution of Revenue (in LE)	
A. Uninsured Non-poor	MOHP (current expenditures)	15
	Households	
	Roster Fee	10
	Visit Fees	6
	Copayments	2
	Total Revenue	33
B. Uninsured Poor	MOHP	
	Current Expenditures	15
	Roster Fee Subsidy	10
	Copayment Subsidy	1
	Subtotal MOHP	26
	Households	
	Visit Fees	6
	Copayment	1
	Subtotal Households	7
	Total Revenue	33
C. Insured School Children	HIO	15
	Households	
	Roster Fee	10
	Copayments	4
	Total Revenue	29
D. Insured Pensioners	HIO	110
	Households (Roster Fee)	10
	Total Revenue	120
E. Insured Employees	HIO	20
	Household (Roster Fee)	10
	Total Revenue	30

Note: If roster fees cannot be charged from the insured, the HIO will have to pay a higher capitated amount.

Next Steps

During the coming months, the following steps should be taken to refine the financing options for the pilot project:

- Conduct an analysis of how MOHP and HIO policies can be brought in line with "best practice" guidelines.
- Conduct cost studies at the new pilot sites.
- Conduct an analysis to estimate the per capita cost for different categories of enrollees.
- Use cost estimates to develop roster fees and copayment rates for HIO clinics and private providers who participate in the pilot project.
- Carry out detailed assessments of the cost of hospitalizations for complications arising from arthritis, bronchial asthma, hypertension, and diabetes. Use these cost estimates to decide whether any of these services should be included in the Basic benefits package.

- Develop and implement a plan on fully integrating vertical programs into the Family Health Units in a manner that increases efficiency and reduces overhead costs.

- Conduct a systematic assessment of the introduction of roster fees and copayment rates on beneficiaries on utilization rates.

- Develop criteria to define the poor.

- Conduct an analysis of the factors driving cost and risk. Based on this, develop a strategy for constraining risks and costs.

- Conduct an analysis of the true administrative costs of running the fund, which were arbitrarily assumed to be 10 percent of total estimated Family Health Fund costs.

- Recruit and train business managers for Family Health Units and Family Health Centers.

1. Introduction

This report was developed through a series of meetings between the members of the Technical Support Office (TSO) of the Ministry of Health and Population (MOHP); and the High Committee for Insurance, which oversees the Family Health Fund. Since the Seuf clinic is the only unit currently operational, much of the data used are derived from there. This report presents for consideration a set of financing options for the pilot sites in Alexandria. Data on enrollee profile, utilization, and costs are derived from the Family Health Units and Family Health Center at Seuf as well as from other relevant studies. Where actual data were not available, estimates have been used. The report drew upon the following sources of information:

- Alexandria health expenditure study
- Analysis of the profile of the enrollee population at Seuf
- Analysis of encounter forms and other utilization data at Seuf
- Detailed cost analysis for both Unit and Center activities at Seuf
- Patient satisfaction survey conducted at Seuf.

In addition to presenting the cost and financing options, the report identifies specific issues on which the minister of health will have to make policy decisions (see Annex A). Given that the pilot has just begun and not enough information currently exists, the focus of this report is restricted to suggestions for financing options for the short term.

The utilization and cost estimates presented here are preliminary as they are based on the first three months' experience at Seuf. Ongoing assessments of the costs and utilization at the Family Health Units at Seuf, Abou Qir, Mohsen, Khorshed, and Gon will be needed to refine these estimates. The suggestions presented here are geared towards developing financing options for an urban model. Modifications will be needed for rural areas.

Readers unfamiliar with the Egyptian health care system and health sector reforms are referred to the PHR publications in the bibliography annexed to this report (Annex D). Technical report No. 35 is of particular relevance to this report.

2. The Principles

The following seven basic principles were used for guiding this work:

1. The Family Health Fund should be responsible only for the Family Health Units, referral services contained in the basic benefits package including specialist and hospital care, and the administrative costs of the fund.

2. Financing should support enhanced access to basic health services that are of an acceptable quality and provide the greatest benefits to individuals with low incomes, women, and children.

3. In the short-term, costs should be fully recovered from current MOHP expenditures, households, and the Health Insurance Organization (HIO).

4. Everyone will be expected to share in the costs of the health scheme based upon his or her ability to pay.

5. As a safety net, the government or other sources should explicitly subsidize costs incurred by the poor. The government should continue to finance the costs of community-based public health services.

6. The Family Health Center should be economically sustainable.

7. The Family Health Units should be run efficiently and effectively to ensure the ability to cover costs and provide quality services.

The financing options presented here are part of a broader strategic framework for supporting sustainable family health care. This strategic framework is presented in Table 1. Giving adequate attention to and support for these integrated strategies is key to the short- and long-term financial sustainability of the reform and the pilot.

Table 1. Recommended Strategies to Support Sustainable Primary Care for Families

Quality of care	. Facility accreditation . Performance-based provider incentives . Patient satisfaction surveys . Facility quality teams . Family choice
Referrals	. Limit referrals to basic benefits package services . Report provider referral rates . Prepare referral outcome reports
Hospital care	. Hospital services restricted to basic benefits package . Hospital outcome reports
Use of resources	. Business manager for each facility . Cost accounting system . Performance indicators
Pharmaceuticals	. Essential drug list . Patient/provider education. . Provider pharmaceutical use reports
Facility maintenance	. Depreciation allowance for each facility . Family choice of facility
Chronic disease management	. Basic benefits package for referrals and hospital care . Free access to primary care that includes health education, prevention, and promotion services
Adequate resources for primary care	. Cost-based reimbursement rates . Monthly facility cost-performance reports . Financially and managerially separate family health units and family health centers
Key primary care services: family planning, maternal child health, communicable disease control	. Basic benefits package . Basic lab services and immunizations free of charge . Performance-based provider incentives
Subsidies for the poor	. Social worker part of primary health team . Standard guidelines for eligibility

3. Baseline Health Expenditures in Alexandria

This section presents a brief overview of health care use and expenditures in Alexandria. This will be useful in subsequent discussions on raising resources from households to pay for health services. In fiscal year 1997, total health spending in Alexandria is estimated to have been LE 867.9 million. This is equivalent to LE 260.78 per capita (US$76.93), as shown in Table 2. Per capita expenditures in Alexandria are more than twice the national average. Public funds accounted for 30 percent of total health financing. Private funding accounted for 70 percent with the bulk coming from household out-of-pocket expenditures, which represented 59 percent of all health expenditures.

Table 2. Per Capita Expenditure by Source

Source	Per capita (LE)	Percentage
MOF	79.40	30.45%
Firms	26.39	10.12%
Households	153.48	58.86%
Donors	0.90	0.35%
Others	0.61	0.23%
Total	260.78	100.00%

Source: Alexandria Health Expenditure Study

As illustrated in Table 3, MOHP facilities received 19 percent of total financing resources in the health sector, HIO facilities received 16 percent, Alexandria University hospitals received 11 percent, and Alexandria Curative Care Organization (CCO) received 3 percent. Drug purchases accounted for 33 percent of total health spending with the majority of it being out-of-pocket expenditures by households.

Table 3. Per Capita Expenditure by Provider

Provider	Per capita (LE)	Percentage
MOHP	49.28	18.90%
CCO	6.87	2.64%
University Hospitals	29.40	11.27%
HIO	41.70	15.99%
Private	47.26	18.12%
Pharmacies	86.28	33.09%
Total	260.78	100.00%

Source: Alexandria Health Expenditure Study

Alexandria rates high for insurance coverage with 58 percent of the population covered under HIO insurance schemes. The proportion of individuals in Alexandria with insurance is higher than the national coverage rate of 37 percent. Table 4 shows the number of persons covered by various social insurance schemes.

Table 4. Insurance Coverage

Category of Coverage	Number of Alexandria Residents Covered
Law 79 (Workers)	877,066
Law 79 (Pensioners)	184,105
Law 32	3,313
School Health	870,390
Total	1,934,874

Source: Alexandria Health Expenditure Study

Significant inequities exist in access to and financing of health care. Annual per capita health care use rates for those in the lowest income quintiles were less than half those of individuals in the highest income quintile. Similarly, per capita expenditures for those in the lowest income quintile was LE 37, compared with LE 359 for those in the highest income quintile.

The MOHP remains the largest institutional financier and provider of health services for the poor. Of those in the lowest income quintile, 63 percent of their outpatient visits took place at MOHP clinics, and only 4 percent of visits occurred in the private sector. The MOHP also is most effective in targeting its spending on low-income individuals. As an example, MOHP spent LE 33 per capita on those in the lowest income quintile for outpatient care and only LE 20 on those in the highest income quintile. On the other hand, expenditures of the HIO and university hospitals tend to favor higher income individuals. The MOHP thus plays a very important role in providing a safety net for the uninsured and the poor.

4. Analysis of the Seuf Family Health Unit and Family Health Center

4.1 Profile of the Population

The introduction of Family Health Units has drawn into the health system those most in need and least likely to have insurance. Table 5 profiles the enrollee population at Seuf and compares it with the rest of the population in Alexandria. The 4,275 families for whom basic demographic information was available accounted for 19,971 individuals yielding an average family size of 4.7 persons. The age and gender mix at Seuf closely resembles that of the rest of the governorate. However, viewing the profile by occupation shows that only 14 percent of those enrolled are employed in the formal sector. Similarly, the percentage of individuals in the enrollee population who are insured is less than the average for Alexandria. The majority (78 percent) of the enrollee population is made up of housewives, school children, pensioners, the self-employed, and the unemployed. In other words, the Family Health Units at Seuf are attracting precisely those population segments that need to be targeted for high-quality primary health care services.

Males constitute 63 percent of all insured and females the remaining 37 percent. Table 6 provides a more detailed breakdown of the insurance status of the enrollee population by gender. For every age group, other than children ages 6 to 14, males are far more likely to be insured than females. Several key differences of insurance status by age and gender are apparent. First, only 2.3 percent of children under five are insured. This percentage is 2.7 percent for male children under five and 1.9 percent for female children under five. Second, the high insurance coverage for both males and females ages 6 to 14 is due to school health insurance. Third, less than 2 percent of females in the age group 50 to 59 have insurance while the figure for males in the same age group is 69.5 percent. Similarly, while 74.9 percent of males over 60 are insured, less than 3 percent of females in this age group have insurance. Finally, looking at insurance status by occupation, school children, employees, workers, and pensioners are largely insured. However, only 1 percent of housewives, 2.7 percent of the unemployed, and 5.5 percent of the self-employed reported having any insurance.

Table 5. Profile of Enrollee Population at Seuf

Category	Enrollees	Alexandria
Total Sample		
Number of Families	4275	
Number of Individuals	19971	
Average Family Size	4.7	
Gender		
Males	50.7%	51.1%
Females	49.3%	48.9%
Age Groups		
00-05	9.3	15.5
06-14	32.7	24.3
15-49	42.7	48.4
50-59	9.2	5.6
60 and older	6.1	6.1
Insurance Status		
Insured	43.2	58.0
Uninsured	56.8	42.0
Education		
Below School Age	14.7	
Illiterate	18.7	
Read and Write	22.3	
Primary	14.9	
Secondary	14.7	
Preparatory	9.5	
University	3.8	
Post-university	1.1	
Don't Know	.3	
Marital Status		
Married	64.3	61.8
Single	26.5	30.5
Widowed	5.3	6.8
Missing	3.9	
Occupation		
Student	33.2	
Housewife	22.8	
Unemployed	8.9	
Self-employed	8.2	
Employee	6.7	
Worker	6.4	
Pensioner	4.9	
Technician	4.9	
Soldier	1.4	
Farmer	1.2	
Missing	1.4	

Note: Age of enrollees not available in 9422 cases
Those underage excluded from marital status and occupation calculations
Alexandria population statistics from Central Agency for Population, Mobilization, and Statistics data

Table 6. Percent of Seuf Enrollees Insured, by Gender, Age and Occupation

Category	Males	Females	Total Enrollees
Total Sample	53.7%	32.2%	43.2%
Age Groups			
00-05	2.7	1.9	2.3
06-14	75.6	76.1	75.8
15-49	41.8	13.9	27.5
50-59	69.5	1.8	38.8
60 and older	74.9	2.7	41.9
Occupation			
Student	95.7	95.9	95.8
Housewife		1.0	1.0
Unemployed	3.3	2.4	2.7
Self-employed	5.7	2.0	5.5
Employee	89.2	87.9	88.9
Worker	70.0	28.1	62.8
Pensioner	91.5	78.6	91.3
Technician	6.0	1.6	5.7

This profile of the enrollee population at Seuf is important to use in determining how to finance health services at the pilot facilities because it reveals potential sources of resources. For example, the Family Health Fund could capture:

- Premiums paid by enrollees (and their employers) that are insured,
- Copayments from wealthy enrollees, and
- MOHP funds for the uninsured.

4.2 Profile of Users

Tables 7 and 8 show the age and gender distribution of those using health care. This analysis is based on a random sample of encounter forms because the encounter forms are yet to be entered into the information system. Information was not available to verify the insurance status of those using health services; however, given the demographic profile of the enrollee population, one could hypothesize that, other than school children, the majority of those using health services are uninsured. It is possible that the profile of those using health services might change once all encounter forms are entered and analyzed.

Overall, infants, school-age children, women, and the elderly account for 84 percent of the health care visits. Males between the ages of 16 to 59 account for only 6.7 percent of the visits. Children under five account for 9 percent of visits, children age 6 to 14 account for 9 percent, 15- to 49-year olds account for 55 percent, 50- to 59-year olds account for 18 percent, and those 60 years or older account for 10 percent. Analyzing the data by age category shows that 85 percent of 15- to 49-year

olds using care were women. The comparable percentage was 86 percent for women 50- to 59-years old, and 68 percent for women 60 and older.

Table 7. Characteristics of Those Using Health Services

Category	Percent
Gender	
Males	23.2
Females	76.8
Age Groups	
00-05	9.1
06-14	9.1
15-49	54.5
50-59	17.7
60 and older	9.6

Source: Analysis of a sample of encounter forms

Table 8. Utilization of Services, by Age and Gender (Percent)

Category	Males	Females	Total
Total Sample	23.2	76.8	100.0
Age Groups			
00-05	55.6	44.4	100.0
06-14	50.0	50.0	100.0
15-49	14.8	85.2	100.0
50-59	14.3	85.7	100.0
60 and older	31.6	68.4	100.0

Source: Analysis of a sample of encounter forms

4.3 Defining the Poor

No specific criteria exist for identifying a poor family. At the time of use, if an individual claims that he or she is unable to pay because of poverty, the case is referred to the social worker who then makes a determination. Being poor does not exempt the individual from the visit fee but allows him or her to pay a reduced copayment for investigations. Information on household characteristics is contained in the family folders. However, these data have yet to be entered into the computer. Given this information, an analysis was conducted of a random sample of 5 percent of the family folders, which showed that roughly 25 percent of the families reported a per capita annual income of less than LE 300. Discussions with the director of the Seuf center and the social workers indicated that concessions because of poverty were granted in less than 10 percent of cases. This would imply that nearly 90 percent of the individuals are paying for health services. The patient satisfaction survey conducted at Seuf (Montazah Pilot Report #1) shows that nearly 30 percent of the patients suggested increasing the ticket price to guarantee the continuity of quality services and drugs. The question of defining “the poor” will become more pronounced when roster fees, increased visit fees, and higher copayments are introduced. The government’s liability will depend on the characteristics used to

define eligibility for subsidized care. One of the tasks that should be undertaken as part of the pilot activity is the development of objective criteria for categorizing families as poor.

4.4 Type of Visits

To understand the type of services (acute or chronic) and specific health conditions for which individuals were seeking care, an analysis was conducted of visits occurring at three clinics (six family doctor practices) in July. Family doctor practice in this case refers to one family physician, one family nurse, and a half-time social worker. Data from a seventh family practice was not taken into account as the practice began in the middle of the month. July was selected because it was believed the type of visits would have stabilized by that time. Table 9 shows that the 2,624 visits that took place in July were equally divided between new and repeat visits. Acute care visits accounted for 59 percent of all visits, and visits for chronic conditions accounted for the remaining 41 percent. This high percentage of chronic care visits is probably due to the fact that vertical program services have yet to be fully integrated into Family Health Units. Once this is done, visits for preventive and promotive health services will increase and the share of chronic health visits will decrease.

Table 9. Distribution of Visits by Type of Service

Category	Number	Percent
Total Visits	2,642	100
New Cases	1,324	50
Repeat Visits	1,318	50
Acute Care Visits	1,570	59
Chronic Care Visits	1,072	41

Table 10 breaks down the acute and chronic care visits into new and repeat visits, and illustrates that for acute care visits 63 percent were new visits and 37 percent were repeat visits. The fairly low percentage of repeat visits for acute conditions can be interpreted as an indicator of the good quality of care provided by the family practitioner. For chronic care visits, only 24 percent were new visits and 76 percent were repeat visits. One possible explanation that emerged during discussions was that pharmacists were not allowed to dispense drugs for more than three or four days. Thus, individuals with chronic hypertension or diabetes would have to return multiple times each month merely to get their drugs. These repeat visits, in addition to putting a strain on households, reduce the time the family physician has to attend to other patients. The high percentage of repeat visits needs much greater scrutiny, and it is possible that new guidelines will have to be developed for treating patients with chronic conditions.

Table 10. Analysis of Acute and Chronic Care Visits

Category	New Visits	Repeat Visits
Acute Care Visits	63%	37%
Chronic Care Visits	24%	76%

Table 11 provides a greater breakdown of chronic care visits by diagnosis. Hypertension at 30 percent accounted for the highest percentage of visits followed by diabetes (27 percent), arthritis (27 percent), bronchial asthma (12 percent), and antenatal care (4 percent). Bronchial asthma and arthritis, which together accounted for 39 percent of chronic visits, are not included in the basic benefits package. Analysis of data from HIO clinics and university hospital outpatient clinics also seem to support including these services at the Family Health Unit due to the high demand for care.

Table 11. Analysis of Chronic Care Visits by Diagnosis

Diagnosis	Number	Percent
Hypertension	293	30
Diabetes	318	27
Arthritis	285	27
Bronchial Asthma	129	12
Antenatal Care	47	4
Total	1072	100

Source: Visits in July

The use rate observed in July translated to 3.4 visits per year per enrollee. However, this could change once vertical program services are fully integrated into the Family Health Units. Similarly, if new policies are initiated for dealing with chronic health conditions, then the number of visits for chronic conditions will decrease.

4.5 Referrals and Physician Productivity

Table 12 compares the percentage of referrals at the Family Health Unit at Seuf with that of HIO clinics and an outpatient clinic at the university hospital. The studied sample from HIO and the university clinics included more than just general practitioners. The HIO sample was obtained from two adult polyclinics, each of which employ providers from the general practitioner clinic, the internal medicine clinic, and the gynecology and obstetrics clinic. The HIO student sample was taken from three school clinics. The university outpatient clinics do not have general practitioners, so the studied sample came from the internal medicine and pediatric clinics.

Only 3.4 percent of visits at the Seuf Family Health Units resulted in a referral to a specialist. This compares with 65 percent at the HIO general practitioner clinic and 32 percent at the HIO school clinics. At university hospital clinics, the referral rate was 10.6 percent from pediatric clinics and 11.7 percent for internal medicine clinics. A number of reasons might account for the low referrals at the Family Health Units. Physicians trained in family medicine are not general practitioners in the true sense of the term. As example, two of the family physicians are trained pediatricians and one is an internist. To that extent, they would be less likely to refer routine cases to other pediatricians and internists. This is unlike the situation in HIO clinics where the first line of contact is with general practitioners and strict restrictions on the type of drugs that can be prescribed drives referrals. It should be interpreted from the low level of referrals at Seuf combined with the high patient satisfaction that physicians are providing good quality care.

Table 12. Percentage of Cases Referred to Specialists

Clinic	Referral Rate
Seuf Family Health Units	3.4%
Health Insurance Organization	
Adults	65%
School Children	32%
University Hospital	
Internal Medicine	12%
Pediatrics	11%

Family doctor practices saw an average of 18.3 patients per day and spent roughly 13 minutes with each patient. On the other hand, specialists saw less than one patient per day. The low referral rate combined with the very low number of cases specialists see per day means careful thought should be given to the number of specialists at the Family Health Center and the number of Family Health Units required to keep them optimally employed.

5. Methodology to Estimate Costs

The key to developing options to financing the pilot project in Alexandria is an assessment of the cost of providing these services. In the past, normative cost estimates were developed. Where possible, this report uses actual costs. Where actual data were not available, estimates were used. As an example, while the actual salary and drug costs for each family doctor practice as well as the majority of administrative costs were known, many units at Seuf were either not fully staffed or not working to capacity (the x-ray unit for example), and in these cases, estimates had to be used. Similarly, the final staffing and salary structure of the Family Health Fund has yet to be finalized. Therefore, it was not possible to use actual costs. It was assumed, however, that the administrative costs of the Family Health Fund should not exceed 10 percent of other costs and that the fund should have a reserve ratio of 10 percent.

In estimating costs, a three-step process was carried out that included:

- Division of Activities – As a first step, activities at Seuf were divided into cost centers. These cost center activities were then divided into those related to the Family Health Unit and those related to the Family Health Center.

- Development of Cost Estimates – Detailed cost estimates were then developed for the Family Health Unit and Family Health Center cost centers. Cost estimation assumed that the Unit and Center would be fully staffed and operational. Where actual costs were not available, estimates based upon other cost studies were used. Administrative and overhead costs were allocated between Family Health Unit and Family Health Center cost centers proportionate to their share of total costs.

- Calculation of Per Capita Enrollee Cost – The per capita cost of an enrollee was calculated by adding the cost of a referral to specialists, investigations, hospitalization, fund administration, and fund reserve costs to the Family Health Unit costs and then dividing the total cost by the number of enrollees at a Family Health Unit. At Seuf, there are 600 families with 3,000 individuals registered with each family doctor.

For purposes of this assessment, three scenarios are presented: the base case with current scenarios, a scenario where incentive payments increase salaries by 250 percent, and a scenario where incentives increase salaries by 400 percent.

5.1 Family Health Unit Activities

The family practice consists of a family physician, a family nurse, and a half-time social worker. Each Family Health Unit has a roster of 600 families with an enrollee population of 3,000 individuals. Because some of the visits of the enrollee population would occur at the emergency rooms, a part of this cost was assigned to the unit. Similarly, for purposes of costing it was assumed that basic lab tests would be conducted at the unit. This meant assigning some of the lab costs at Seuf to each of the units. The Family Health Unit provides primary outpatient care and refers patients to specialists, orders investigations, and authorizes hospitalizations.

5.2 Family Health Center Activities

The Family Health Center would support a number of Family Health Units. For purposes of costing, the following activities were treated as *center activities:*

- Specialist Practices (fully staffed, there will be two pediatricians, two OB-Gyns, and two internists at Seuf)
- Radiology Unit
- Laboratory
- Emergency Units
- Operating Theater
- Inpatient Ward
- Delivery Room
- Pharmacy
- Dental Unit
- Community-based Public Health Services

6. Cost Estimates for Seuf Family Health Units

6.1 Cost of a Family Roster

Detailed cost estimates are presented in Annex B. Tables 13 and 14 present summary information for annual and per capita costs for a family doctor practice roster consisting of 600 families with 3,000 individuals.

The three scenarios presented here are the base case scenario with current salaries; Scenario I, where performance-based incentive payments increase salaries by 250 percent; and Scenario II, where performance-based incentives increase salaries by 400 percent. Annual costs for a family practice range from LE 49,961 to LE 91,464. This translates to per capita costs of LE 17 for the base case, LE 25 for Scenario I, and LE 31 for Scenario II.

The fund-related costs include the administrative costs of running the fund as well as the reserves that will need to be established. The administrative overhead at the Family Health Fund has been constrained at 10 percent. This is to ensure that the fund is run efficiently and that there is an emphasis on cost containment as well as accountability in that every employee is working at optimum capacity. For now, the reserves have been set at 10 percent. This is to provide a cushion for cost fluctuations caused by unanticipated use of the fund, increases in price, or other unforeseen circumstances. More exact reserving ratios can be developed based on longitudinal performance data.

Table 13. Annual Costs Per Family Roster (Egyptian Pounds)

Category	Base Case	Scenario I (Incentive of 250%)	Scenario II (Incentive of 400%)
Family Practice	34,812	53,591	66,272
Referral Services	6,821	8,537	9,948
Fund-related Costs	8,327	12,426	15,244
Total Costs	49,961	74,554	91,464

Table 14. Annual Per Capita Costs Per Enrollee (Egyptian Pounds)

Category	Base Case	Scenario I (Incentive of 250%)	Scenario II (Incentive of 400%)
Family Practice	11.60	17.86	22.09
Referral Services	2.27	2.85	3.32
Fund-related Costs	2.78	4.24	5.08
Total Costs	16.65	24.85	30.50

It appears that creating an integrated delivery system of primary health care services with well-defined referral systems allows quality services to be provided at a reasonable cost with increased patient satisfaction.

The lower than expected per capita costs observed at the Seuf Family Health Unit to date and projected for the future depend on several key factors including:

- Strong management oversight of the Family Health Unit's performance and costs
- Strict control over administrative overheads through rational staffing
- Selective referrals to specialists and for investigations
- Strict control over drug prescriptions and costs
- The ability to purchase hospitalization services at competitive rates (in this case from Shark El Medina Hospital)
- The assumption that Family Health Fund administrative costs will not exceed 10 percent of the costs of family practice and referral costs.

The strong management oversight of the Family Health Unit activities reinforces the role of the *business manager*, who is expected to be hired to oversee the workings of a group of family practices. It also calls for a fundamental change in the manner in which health units are run. There is a need for constant internal review of treatment practices, referral practices, cost variations, and feedback to family practices on how they are performing vis-à-vis patient care and costs. Similarly, the fund needs to exercise its functions: contracting, payment, and oversight while keeping its own administrative costs down. For the Family Health Unit to function effectively, information systems must be strengthened, including creating standard weekly and monthly management reports. The Family Health Fund will provide guidelines for cost accounting systems and quality reports. At the same time, ongoing training in quality improvement is essential to sustain an acceptable quality of care and patient satisfaction.

6.2 Cost of Family Health Center-Related Activities

As mentioned, the detailed cost estimates of center level activities are presented in Annex B. Presented here is the summary of the annual costs of performing center activities. The annual cost of operating the Family Health Center Activities at Seuf ranges from LE 669,000 in the base case to more than LE 1,250,000 in Scenario II (see Table 15).

Referrals from each family practice will cover less than 1 percent of the costs at the Family Health Center. As an example, assuming one family physician refers 10 percent of his or her cases to specialists (compared to the current 3.5 percent), each of the six specialists at Seuf will receive only 1.5 percent of his or her cases from a family practitioner. Similarly, the number of x-rays ordered by a family physician will account for less than 2 percent of the costs of the radiology unit. A similar level of referrals will be needed to fully support the operating theater.

Table 15. Annual Costs of Family Health Center Activities (Egyptian Pounds)

Activity	Base Case	Scenario I (Bonus of 250%)	Scenario II (Bonus of 400%)
Specialist Practices	61,508	142,797	227,337
Radiology Unit	94,227	125,832	147,372
Laboratories	36,473	66,297	74,057
Emergency Rooms	99,030	125,832	142,670
Operation Theater	124,896	129,144	154,248
Inpatient Ward	33,214	53,767	67,482
Delivery Room	1,830	2,329	2,673
Pharmacy (no drugs costs)	6,475	24,480	36,257
Dental Unit	84,382	150,369	168,754
Public Health Services	15,190	38,721	43,826
Family Health Fund Costs	111,444	167,226	222,934
Total Annual Costs	668,668	1,003,360	1,227,606

It is recognized that salaries of specialists and other staff working at the Family Health Center would have to be increased in keeping with the level of compensation for family doctor practices. However, if salary increases are tied to productivity, the low referral rate to specialists will require a close scrutiny of staffing norms at the center. It is not possible to draw broad inferences on the economic viability of the Family Health Center from the experiences of family doctor practices at Seuf. Family Health Units at Mohsen, Khorshed, and Gon are expected to be operational soon, and their referral rates might vary significantly from that observed at Seuf.

Making Family Health Centers economically viable will be particularly challenging. From a financing perspective, it is suggested that the following be considered in the short term:

- The MOHP continue to pay for the costs of the Family Health Center, including any incentive payments to the staff.
- Costs for each cost center at the Family Health Center should be closely monitored in the coming months.
- The combined experience of the Seuf, Mohsen, Khurshid, and Gon health units and the completion of the World Bank-supported master plan will provide important information on the appropriate catchment area and staffing norms for the Family Health Center.
- A business manager should be appointed to develop a business plan on how to make the Family Health Center viable. Some options might include entering into an agreement with the Shark El Madina referral hospital to provide services for their patients at the operation theater, x-ray, and laboratory units at Seuf and providing services on a fee-for-service basis to non-rostered patients.
- For those services referred to the Family Health Center by the Family Health Unit, the Family Health Fund will pay on a fee-for-service basis.

7. Financing Options for Pilot Sites in Alexandria

The short-term financing options take into account the following constraints:

- The financing options will have to be developed within existing rules and regulations.
- Enrollment at the Family Health Units is voluntary.
- HIO beneficiaries will continue to pay the same visit fees and copayment rates. In other words, for those covered under Laws 32 and 79, visit fees and copayment for drugs will be either nonexistent or negligible. For school children, that copayment will be a third of the cost of drugs.
- It may be that employees will continue coverage at HIO clinics at their place of employment and their spouse and children will seek care at the Family Health Unit nearest to their home. Pensioners will seek care at the facility nearest to their home.

The three sources of financing are:

- MOHP current expenditures and subsidy for poor families;
- HIO current expenditures; and
- Households, which are responsible for an annual roster fee, visit fees, and copayments for drugs and investigations.

The goal is to cover the base cost at Family Health Units from existing MOHP and HIO expenditures. The Family Health Fund will use roster fees to pay incentives and other costs. Visit fees and copayments for drugs will be retained at the level of the facility and will go towards payment of incentives and other costs.

For the short- and long-term sustainability of the reform, the MOHP and HIO should continue to support capital investment for upgrading existing facilities and constructing new facilities. For private sector providers who are selected to participate in the reform, the MOHP should assist them in getting loans and other assistance for upgrading their facilities to meet the established standards.

In the short-term, the MOHP will bear the full cost of the Family Health Centers. As affiliated Family Health Units get established and other avenues of resource mobilization are identified, the share of the MOHP support will decline. The Family Health Fund will reimburse the center on a fee-for-service basis for specialist visits and investigations limited to those in the basic benefits package.

At a cost of LE 31 per capita it should be feasible to finance the costs from the three sources identified above. The following section offers a likely financing scenario for enrollees at MOHP Family Health Units, making some assumptions on roster fees, copayment rates, and government subsidies for the poor. A series of issues and options pertaining to financing are presented in Annex

A. Once the Minister of Health has made a decision on these issues, the final financing matrix can be developed.

7.1 Financing Scenario

This section presents a likely scenario for financing populations enrolled at MOHP Family Health Units. Tables 16 and 17 show the distribution of enrolled individuals by insurance status and per capita cost. The payment schedule for households is presented in Table 18. The methodology presented here can be used to generate financing options at HIO and private sector Family Health Units when cost data are available.

Number of families enrolled with one family doctor practice	600
Number of individuals	3,000

Table 16. Distribution of Enrolled Individuals at Seuf FHU by Insurance Status

Category	Percent
Noninsured Non-poor	32
Noninsured Poor	25
Insured Employees	6
Insured School Children	32
Insured Pensioners	5
Total	100

Table 17. Distribution of Per Capita Annual Cost

Category	Amount (LE)
Annual Per Capita Cost	31
Annual Per Capita Cost for Pensioners	120
Annual Per Capita Cost Non-pensioner	27

Note: Based upon Seuf cost analysis and HIO data on costs on pensioners

Table 18. Payment Schedule for Households

Item	Cost
Roster Fee	LE 10 per person per year
Visit Fee (applies only to uninsured)	LE 3 per visit No visit fees for immunization, family planning, and antenatal care visits
Lab Investigations (applies only to uninsured)	No fee for investigations at unit (urine, stool, and blood) LE 5 for referral investigations
Copayment Drugs (applies only to uninsured)	LE 1 per drug prescribed per prescription (assumes average of 1 drug per prescription)

For the number of annual visits per capita, it is assumed that two visits per year will be for services that are not related to immunization, family planning, or antenatal care.

Current MOHP expenditures for salaries, medical supplies, and other costs equal roughly LE 15 per enrollee at Seuf. Neither the budget approach nor the amount is expected to change. On average, the MOHP currently spends LE 20 per capita per year on outpatient services in Alexandria. This estimate is based upon the Alexandria Health Expenditure study and the budget tracking system data. It is proposed that after accounting for the current budget expenditures at Seuf, the remaining LE 5 be used to subsidize the costs of the poor. In other words, the efficiency bonus will be reinvested in the poor.

The costs for HIO beneficiaries are estimates. These will need to be refined through a much more detailed and thorough analysis of costs incurred by HIO under different laws using data from Alexandria. The changes in HIO costs will not affect either the conceptual framework or the issues that will have to be addressed as part of the financing plan. It is assumed that the HIO will capitate (pay a fixed amount per enrollee) the Family Health Units based upon the cost of services that will be provided there for their beneficiaries.

Table 19 presents potential revenue generation under this scenario. The slight projected surplus will be used to establish the reserve fund at the Family Health Fund and to provide a buffer against differing population profiles at other MOHP Family Health Units.

Table 19. Likely Distribution of Per Capita Revenue by Category of Individuals

Category of Individual	Distribution of Revenue (in LE)	
A. Uninsured Non-poor	MOHP (current expenditures)	15
	Households	
	Roster Fee	10
	Visit Fees	6
	Copayments	2
	Total Revenue	33
B. Uninsured Poor	MOHP	
	Current Expenditures	15
	Roster Fee Subsidy	10
	Copayment Subsidy	1
	Subtotal MOHP	26
	Households	
	Visit Fees	6
	Copayment	1
	Subtotal Households	7
	Total Revenue	33
C. Insured School Children	HIO	15
	Households	
	Roster Fee	10
	Copayments	4
	Total Revenue	29
D. Insured Pensioners	HIO	110
	Households	10
	Total Revenue	120
E. Insured Employees	HIO	20
	Households (Roster Fee)	10
	Total Revenue	30

Note: If roster fees cannot be charged from the insured, the HIO will have to pay a higher capitated amount.

8. Next Steps

The following steps should be taken to refine the financing options for the pilot project:

- Conduct an analysis of how MOHP and HIO policies can be brought in line with “best practice” guidelines.
- Conduct cost studies at the new pilot sites.
- Conduct an analysis to estimate the per capita cost for different categories of enrollees.
- Use cost estimates to develop roster fees and copayment rates for HIO clinics and private providers who participate in the pilot project.
- Carry out detailed assessments of the cost of hospitalizations for complications arising from arthritis, bronchial asthma, hypertension, and diabetes. Use these cost estimates to decide whether any of these services should be included in the basic benefits package.
- Develop and implement a plan on fully integrating vertical programs into the Family Health Units in a manner that increases efficiency and reduces overhead costs.
- Conduct a systematic assessment of the impact on utilization rates of the introduction of roster fees and copayments.
- Develop criteria to define the poor.
- Conduct an analysis of the factors driving cost and risk. Based on this, develop a strategy for constraining risks and costs.
- Conduct an analysis of the true administrative costs of running the fund, which were arbitrarily assumed to be 10 percent of total estimated Family Health Fund costs.
- Recruit and train business managers for Family Health Units and Family Health Centers.

Annex A. Policy Issues and Options

Table A1. Roster Fee Related Issues

Policy Questions	Option I	Option II	Option III	Recommendations
1. Should the roster fee be the same across all facilities?	The roster fee is the same across all facilities	. There is a three-tier system with one roster fee for MOHP . Facilities, one for HIO clinics, and one for Private Providers		Option II Probably costs will be lowest at MOHP units, followed by HIO clinics, and private providers. If individuals choose to roster at HIO or private providers, they will pay higher roster fees. This will restrict the financial liability of MOHP and the Family Health Fund while allowing families to choose their family health doctor.
2. Should the annual roster fee vary by the number of members of the family roster?	There is one roster fee irrespective of how many members of a family roster	There will be a lower roster fee (say LE 10) per family member if all members of a family roster and a higher roster fee (say LE 15) if only some members of a family roster		Option II This will permit the situation where employees continue at the HIO clinic and their spouse and children enroll at a Family Health Unit close to their place of residence
3. Should there be a maximum amount that a family pays?	No family maximum	Family maximum of LE 60 per year if all members of a family roster and LE 80 if all members of a family do not roster		Option II
4. Who should pay the roster fee?	Family pays the entire roster fee	Non-poor families pay the entire roster fee MOHP subsidizes entire or part of the cost of the poor	Non-poor families pay the fee for only the uninsured. MOHP subsidizes entire or part of the cost of the poor uninsured HIO pays the roster fee for the insured	Option II

Table A2. Visit Fee Related Issues (applies only to uninsured)

Policy Questions	Option I	Option II	Option III	Recommendations
1. Should visit fees vary by type of facility enrolled?	Visit fee is the same across all facilities	Visit fee varies by MOHP, HIO, and Private facility with the lowest fees at MOHP facilities, slightly higher fees at HIO clinics, and the highest fees at Private Clinics.	Visit fees are the same at MOHP and HIO facilities and higher at Private clinics	Option III
2. Should everyone pay the same fees for family doctor practice visits?	Everyone pays the same fee irrespective of income	The poor pay a lower fee with the difference being subsidized by the MOHP or HIO (some pensioners may be poor)		Option I
3. Should there be different fees for different times of the day	Current system of LE 1 from 8 am to 11am with free drugs LE 3 after 11am with full cost of drugs	LE 3 for entire day with copayment for drugs		Option II
4. Should immunization, family planning, and antenatal care visits be exempted visit fees?	No exemption	These visits are exempted from visit fees		Option III It is suggested that the fee for other visits be increased from the current level to at least LE 3

Table A3. Copayment Related Issues (applies only to uninsured)

Policy Questions	Option I	Option II	Recommendations
1. Should copayment for drugs for be a percentage of costs or a flat amount for each drug prescribed per prescription?	The copayment rate is a percentage of drug costs	The copayment rate is a flat amount (say LE 1) for each drug prescribed per prescription	Option II Not only is this administratively simple but also reduces the burden on individuals with chronic health conditions
2. Should blood, stool, and urine investigations done at the Family Health Unit be exempted from copayments?	No exemptions	These are exempted from any copayments	Option II This will help more effective integration of vertical programs into the FHU.
3. Should copayment rates for investigations at the Family Health Center vary by type of investigation?	Keep existing copayment schedule for lab and other investigations	Charge a flat fee for investigations done at center.	Option II This will be administratively simple and if well structured would make it revenue neutral.
4. Should the copayment rates be the same for everyone?	Everyone pays the same copayment rate for drugs and investigations	The non-poor pay the full copayment rates for drugs and investigations. The MOHP and HIO subsidize the costs of the poor	Preferred Option: Option II

Table A4. Issues Related to HIO Insured Rostered at MOHP or Private Facility

Policy Questions	Option I	Option II	Recommendations
How will HIO reimburse Family Health Units for their insured?	The HIO contracts with facility and pays a fixed annual capitated Amount. This will cover Family Doctor Practice visits, Family Health Center referral for BBP services.	The HIO contracts with facility to provide care and pays on a fee-for-service basis	Option I It is proposed that MOHP facilities not issue sick leave certificates for HIO insured.

Table A5. Issues Related to Uninsured Family Members Enrolled at HIO or Private Facility

Policy Questions	Option I	Option II	Option III	Recommendations
1. Should the MOHP pay a per capita base cost at these facilities?	The MOHP does not pay any base costs. The households are responsible for all costs.	The MOHP pays a base cost for all uninsured at HIO clinics or private clinics	The MOHP pays the base cost for only the poor at HIO clinics and private facilities	Option II The base cost will be pegged to lowest cost provider. Patients are free to choose where they go and base cost follows them. They are likely to go to MOHP facilities because of differing roster fees and high quality at MOHP facilities.
2. Should MOHP subsidize other costs of the poor (roster fees, copayments etc) at these facilities?	The MOHP does not subsidize any costs	The MOHP subsidizes only roster fees and copayments on drugs and investigations at HIO facilities but not at private facilities	The MOHP subsidizes only roster fees and copayment on drugs and Investigations at both HIO and private facilities	Option III The subsidy should follow the patient. However, given higher roster fees at HIO private clinics it is likely that very few poor individuals will opt for these facilities

Table A6. Issues Related to Treating Chronic Conditions

Policy Questions	Option I	Option II	Recommendations
Should the prescribing protocols be changed for drugs related to chronic conditions?	There is no change in existing prescribing protocols	Change protocols to one prescription and three weekly refills. The refills will be filled directly by the pharmacist without the patient having to visit the physician	Option II

Table A7. Issues Related to Drugs (does not apply for Law 32 and Law 79 beneficiaries)

Policy Questions	Option I	Option II	Recommendations
Should all rostered individuals (irrespective of where they are rostered) be subject to the same pharmaceutical copayment rates?	Individuals pay different copayment rates depending on where they roster	Individuals pay the same copayment rate irrespective of where they roster	Option II However individuals must use the pharmacy identified by the Family Health Fund.

Annex B. Cost Estimates: Seuf Family Health Unit and Family Health Center

Table B1. Estimated Annual Costs at Seuf (Health Unit and Center) (Egyptian Pounds)

	Salaries	Drugs	Medical Supplies	Non-Medical Supplies	Utilities	Depreciation	Total
Family Doctor Practice Teams	40,212	107,683	2,520	—	2,400	4,976	157,791
Specialists Team	32,328	7,284	1,937	—	1,800	11,366	54,715
X -Ray Unit	13,344	—	46,960	—	7,200	16,317	83,821
Labs	16,992	—	18,468	—	4,800	3,000	43,260
Emergency Rooms	28,704	7,240	2,520	—	1,200	997	40,661
Operating Theater	14,532	11,946	7,168	—	9,600	38,614	81,860
Inpatient Section	8,304	12,000	6,000	—	2,400	842	29,546
Delivery Room	6,228	23,892	11,946	—	1,200	10,995	54,261
Pharmacy	6,720	—	—	—	600	360	7,680
Public Health	9,792	—	—	2,400	600	720	13,512
Admin./Overhead	59,406	—	—	3,600	6,000	13,046	82,052
Dental Unit	20,256	26,507	18,000	—	4,800	5,500	75,063
TOTAL	256,818	196,552	115,519	6,000	42,600	106,732	724,221

Table B2. Annual Costs for Population Enrolled with One Family Doctor Practice

	Base Case	Scenario I (Incentive 250%)	Scenario II (Incentives 400%)
Family Doctor Practice			
Salaries			
Family Practitioner (1)	3,024	8,974	12,544
Family Nurse (1)	2,076	6,389	8,977
Social Worker (0.5 of worker)	1,602	4,687	6,538
Subtotal Salaries	6,702	20,050	28,059
Operating Costs			
Drugs	17,947	17,947	17,947
Vaccination	1,485	1,485	1,485
Medical Supplies	420	420	420
Utilities	400	400	400
Depreciation	829	829	829
Subtotal Operating Costs	21,081	21,081	21,081
Allocated Cost			
Labs	1,803	3,169	3,431
Emergency unit	678	1,631	2,204
Pharmacy	1,130	1,170	1,680
Admin./Overhead	3,419	6,489	9,817
Subtotal: Allocated Costs	7,029	12,459	17,131
Subtotal Family Doctor Practice Costs	34,812	53,591	66,272
Referral Services			
X-Ray	279	361	410
Lab	162	285	309
Specialist Services	912	2,047	3,160
Delivery Room	1,628	2,004	2,229
Hospitalization	3,840	3,840	3,840
Subtotal: Referral Services	6,821	8,537	9,948
Fund-related Costs			
Fund Administration	4,163	6,213	7,622
Fund Reserve	4,163	6,213	7,622
Subtotal Fund-related Costs	8,327	12,426	15,244
Grand Total	49,961	74,554	91,464

Table B3. Annual Costs Per Enrollee (Egyptian Pounds)

	Base Case	Scenario I (Incentives of 250%)	Scenario II (Incentives of 400%)
Family Doctor Practice			
Salaries			
Family Practitioner (1)	1.01	2.99	4.18
Family Nurse (1)	0.69	2.13	2.99
Social Worker (0.5 of worker)	0.53	1.56	2.18
Subtotal: Salaries	2.23	6.68	9.35
Operating Cost			
Drugs	5.98	5.98	5.98
Vaccination	0.50	0.50	0.50
Medical Supplies	0.14	0.14	0.14
Utilities	0.13	0.13	0.13
Depreciation	0.28	0.28	0.28
Subtotal: Operating Costs	7.03	7.03	7.03
Allocated Cost			
Labs	0.60	1.06	1.14
Emergency unit	0.23	0.54	0.73
Pharmacy	0.38	0.39	0.56
Admin./Overhead	1.14	2.16	3.27
Subtotal: Allocated Costs	2.34	4.15	5.71
Subtotal Family Doctor Practice Costs	11.60	17.86	22.09
Referral Services			
X-Ray	0.09	0.12	0.14
Lab	0.05	0.10	0.10
Specialist	0.30	0.68	1.05
Delivery Room	0.54	0.67	0.74
Hospitalization	1.28	1.28	1.28
Subtotal: Referral Services	2.27	2.85	3.32
Fund-related Costs			
Fund Administration	1.39	2.07	2.54
Fund Reserve	1.39	2.07	2.54
Subtotal: Fund-related Costs	2.78	4.14	5.08
Total Per Capita Costs	16.65	24.85	30.49

Table B4. Annual Costs of Family Health Center Activities with Allocated Overheads (Egyptian Pounds)

Category	Base Case	Scenario I (Incentives 250%)	Scenario II (Incentives 400%)
Specialists Practice			
Salaries			
Doctors (6)	19,872	62,127	87,480
Nurses (6)	12,456	38,334	79,740
Subtotal: Salaries	32,328	100,461	167,220
Operating Cost			
Drugs	7,284	7,284	7,284
Medical Supplies	1,937	1,937	1,937
Utilities	1,800	1,800	1,800
Depreciation	11,366	11,366	11,366
Subtotal: Operating Costs	22,387	22,387	22,387
Subtotal Specialist Practice	61,508	142,797	227,337
Supportive Medical Services Cost			
Radiology Unit	94,227	125,832	147,372
Labs	36,473	66,297	74,054
Emergency Unit	99,030	102,398	142,670
Operating Theater	124,896	129,144	154,248
Inpatient	33,214	53,767	67,482
Delivery Room	1,830	2,329	2,673
Pharmacy	6,475	24,480	36,257
Dental Unit	84,382	150,369	168,754
Public Health	15,190	38,721	43,826
Subtotal Supportive Medical Services	495,716	693,337	837,335
Fund-related Costs			
Fund Administration	55,722	83,613	106,467
Fund Reserve	55,722	83,613	106,467
Subtotal Fund-related Costs	111,444	167,226	212,934
GRAND TOTAL	668,668	1,003,360	1,277,606

Note: Overheads have been allocated

Annex C. Options for Financing Pilot Facilities in Alexandria Presentation

Options for Financing Pilot Facilities in Alexandria

August, 1999

Key Findings

- The introduction of Family Health Units has drawn into the health system those most in need and least likely to have insurance
- Nearly 90% of the visits at the Family Health Units in Seuf are accounted for by infants, school age children, and the elderly
- Current MOHP and HIO expenditures will be sufficient to cover basic costs at the Family Health Units and subsidize costs of the poor. Household contributions (roster, visit and copayment fees) can be used to pay incentives and Family Health Fund costs
- Non-FHU work will be needed to make the Family Health Center economically viable

Profile of Enrollee Population at Seuf FHUs

- ***Seventy-eight percent of the enrollee population is made up of housewives, school children, pensioners, the self-employed, and the unemployed***. Only 14% of the enrolled population worked in the formal sector
- Less than 2% of females in the age group 50-59 and less than 3% in the age group sixty plus are insured
- Only 1% of housewives, 2.7% of the unemployed, and 5.5% of the self-employed reported having insurance. Those with high insurance coverage were school children, employees, workers, and pensioners

Utilization of Health Services

- Nearly 90% of the visits are accounted for by infants, school age children, women, and the elderly
- Acute care visits accounted for 59% of all visits and visits for chronic conditions accounted for the remaining 41%
- For chronic care 74% of the visits were repeat visits. This is because drugs can be prescribed for only very short periods
- Criteria need to be developed for defining "the poor" who will be eligible for government subsidy. Today the decision is made by the social worker attached to the unit

Physician Productivity and Referral

- Family Doctor Practices Provide the majority of patient encounters. Each family doctor saw roughly 18 patients a day
- Specialists saw less than 1 patient per day
- Only 3.4% visits at the Seuf Family Health Unit resulted in a referral to a specialist
- Physicians trained in family medicine are not general practitioners in the true sense of the term. Many at Seuf are specialists in pediatrics or internal medicine and hence refer few cases to specialists

Annual Cost for One Family Roster

A Family Roster consisted of 600 families with 3000 individuals

Annual Costs Per Family Roster (Egyptian Pounds)

Category	Base Case	Scenario I (Incentive of 250%)	Scenario II (Incentive of 400%)
Family Practice	34,812	53,591	66,272
Referral Services	6,821	8,537	9,948
Fund Related Costs	8,327	12,426	15,244
Total Costs	49,961	74,554	91,464

Distribution of Per Capita Revenues for Uninsured

Uninsured Non-Poor	
MOHP Share (current budget expenditures at FHU	LE15
Household Share	
Roster Fee	LE10
Visit Fees	6
Copayments	2
Total	LE 33
Uninsured Non-Poor	
MOHP Share (current budget expenditures at FHU	LE15
MOHP Roster Fee Subsidy	LE10
MOHP Copayment Subsidy	LE 1
Household Share	
Visit Fees	6
Copayments	2
Total	LE 33

Annual Cost of Family Health Center Related Activities

* The annual cost of operating the FHC range from LE 669,000 in the base case to over LE 1,000,000 with incentives of 250%, and LE 1,250,000 with incentives of 400%

* Referrals from One Family Practice cover less than 1% of the costs of the FHC

* Making FHCs economically viable will be particularly challenging

* Options could include providing services for non-FHU patients, collaborating with Shark El-Medina hospital to do minor surgeries, allowing private specialists to use facility

Financing Options for MOHP FHUs

- MOHP uses current expenditures to cover basic costs and subsidies for poor
- HIO will continue to pay for the insured
- Household contributions (roster, visit, and copayment fees) will cover incentive payments and Health Fund Costs
- MOHP continues to support capital investment FHUs and FHCs

One Possible Payment Schedule for Households

Roster Fee: LE 10 per person per year

Visit Fee : LE 3 per visit. No visit fee for immunization FP or antenatal care visits

Lab Investigations: No fee for basic investigations (urine,stool, and blood). Flat fee for referred investigations

Copayment for Drugs: LE 1 per drug prescribed per prescription

MOHP subsidizes Roster Fee for Poor and Pays 50% of drug costs

Annual Per Capita Cost at FHU

Category	Base Case	Scenario I (Incentive of 250%)	Scenario II (Incentive of 400%)
Family Practice	11.60	17.86	22.09
Referral Services	2.27	2.85	3.32
Fund Related Costs	2.78	4.24	5.08
Total Costs	16.65	24.85	30.50

Distribution of Per Capita Revenues for Insured

Insured School Children
HIO Share LE 15
Household Share
Roster Fee LE 10
Copayments LE 4
Total LE 29

Insured Pensioners
HIO Share LE 110
Household Roster Fee LE 10

Insured Employees
HIO Share LE 20
Household Roster Fee LE 10

If Roster fees cannot be charged from households HIO will have to pay These costs are estimates. Data from Seuf, Abou Qir and HIO will be needed to refine these

How Revenues Will be Collected

* MOHP will continue budget expenditures for basic costs
* Household Roster Fees will be collected at facility and transferred to Family Health Fund
* Household copayments will be retained at facility
* HIO will contract on a annual capitated rate with FHU to provide services for insured
* MOHP will transfer roster fee subsidy for poor to Family Health Fund

Annex D. Bibliography

The following reports, all published by the Partnerships for Health Reform, can be downloaded from the PHR's website at http://www.phrproject.com or via email from the PHR Resource Center at pub_order@PHRproject.com

Berman, Peter, El-Adawy, Maha, Nandakumar, A.K. et al. 1997. *A Reform Strategy for Primary Care in Egypt.* Technical Report No. 9. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Berman, Peter, Nandakumar, A.K. and Yip, Winnie C. 1998. *Health Care Utilization and Expenditures in the Arab Republic of Egypt.* Technical Report No. 25. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Frère, Jean-Jacques, Nandakumar, A.K., Taghreed, Adam and El Beih Wessam. 1998. *Costing of the Basic Benefit Package in Egypt.* Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Gaumer, Gary. 1998a. *Monthly Indicators Reporting System for the National Information Center for Health and Population in Egypt.* Technical Report No. 31. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Gaumer, Gary. 1998b. *Data Assessment for the National Information Center for Health and Population, Egypt.* Technical Report No. 30. Bethesda, MD: Partnership for Health Reform Project, Abt Associates Inc.

Gaumer, Gary, Taghreed, Adam, Wessam El-Beih, Lal, Bhavya, Arriaza, Elizabeth and Atkinson, Brad. 1998. *Rationalization Plan for Hospital Beds in Egypt.* Technical Report No. 29. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Lal, Bhavya. 1998. *Egyptian Ministry of Health and Population Intranet/World Wide Web Site Strategy and Plan.* Technical Report No. 28. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Nanadakumar, A.K., Berman, Peter and Fleming, Elaine. 1999. *Findings of the Egyptian Health Care Provider Survey.* Technical Report No. 26. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.